Response to:

County of San Mateo, CA

Request for Proposals No. ISD1830
Enterprise GIS Initiations and Planning

We Are Your Trusted GIS Partner

Kevin Stewart, Managing Partner
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Phone: (205) 941-0442 ext. 135

esri **Partner Network** Platinum

ArcGIS for **Local Government** Specialty

ArcGIS Online Specialty

ArcGIS **Marketplace** Provider

Geographic Information Services, Inc
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Geographic Information Services, Inc

February 27, 2015

County of San Mateo, CA
Information Services Department
Attn: Frances Valido
455 County Center, 3rd FL
Redwood City, CA 94063

Dear Mr. Valido,

Geographic Information Services, Inc. (GISi) is pleased to submit this proposal in response to the County of San Mateo's Request for Proposals ISD1830, for Enterprise GIS Initiations and Planning. We understand that the County is seeking to obtain professional GIS services to conduct a comprehensive GIS needs assessment, develop a conceptual system design, and prepare an implementation plan for the County's enterprise GIS. With a network of 160 GIS experts across the United States, we bring expertise that has served over 400 local government agencies in all 50 states. GISi is confident that our experience and credentials not only match the requirements identified by the County, but that we are uniquely qualified for this project.

Company Summary: Why GISi?

Most Relevant Experience: We have unique local government GIS services expertise. We have worked with many municipalities to provide GIS utilization assessments similar to the services the County is seeking, having provided these same services to numerous clients. In the past four years alone, we have authored over 40 GIS roadmaps and strategic plans/assessments. We have significant experience working on large scale enterprise GIS architectures, and helping clients to meet their needs of today while positioning them for growth and evolution in the future. We bring a unique local perspective as the current GIS service providers for the City of San Mateo, providing GIS professional services and support for a Local Government Information Model (LGIM) design, conversion, and implementation. The City of San Mateo is quickly evolving into one of California's premier GIS programs, and we are the trusted service provider to help the City build their GIS enterprise architecture. We approach every project with a focus on helping our client get the most from their technology investments. We listen to you, we hear you, and we identify and implement solutions that meet your needs.

Recognized Industry Leadership: We are an award-winning professional services firm specializing in Esri Enterprise GIS architecture, design, development, implementation, and administration. We are one of only nine Esri Platinum Business Partners in the US. GISi has also been designated with partner specialties for Esri's ArcGIS for Local Government and ArcGIS Online. We're proud to be one of only a handful of partners that have achieved both specialty designations.

Best People: We recruit employee-owners who share our core values, philosophies, and purpose. We are successful because they are engaged and contribute to building our culture and our company. Our staff includes technical architects, programmers, analysts, and database engineers. Within this proposal you will find an exceptional project manager with significant GIS assessment and municipal government experience who will use processes and technology designed to ensure San Mateo County receives outstanding value.

Our Services

- Esri platform installation & configuration
- Enterprise Architecture design
- Cloud management services
- Data conversion
- Database design and development
- Esri and Cityworks software migration
- GIS Needs and Requirements Assessments/ Strategic Plans
- Project Management
- System design
- Technical support services
- Web application development

Our Locations

We have offices located in Riverside, CA; Birmingham, AL; Southfield, MI; and Alexandria, VA:

California Office	Corporate Headquarters	Michigan Office	Virginia Office
11801 Pierce Street	2100 Riverchase Center	24800 Denso Drive	1600 Duke Street
Suite 200	Suite 105	Suite 340	Suite 300
Riverside, CA 92505	Birmingham, AL 35244	Southfield, MI 48033	Alexandria, VA 22314

In addition to these locations, we have a distributed workforce with staff located on-site with clients or working remotely across 32 states.

Authorized Representatives

The following individuals are authorized to make representations for GISi, and the undersigned is an agent authorized to submit proposals on behalf of GISi:

Kevin Stewart	Susan King	Carrie Green
Managing Partner	Chief Administrative Officer	Chief Financial Officer
2100 Riverchase Center, Ste. 105	2100 Riverchase Center, Ste. 105	2100 Riverchase Center, Ste. 105
Birmingham, AL 35244	Birmingham, AL 35244	Birmingham, AL 35244
(205) 941-0442 ext. 135	(205) 941-0442 ext. 166	(205) 941-0442 ext. 170
kevin.stewart@gisinc.com	susan.king@gisinc.com	carrie.green@gisinc.com

We appreciate the opportunity to submit our qualifications and look forward to building a long-term partnership with San Mateo County. Thank you for your consideration.

Sincerely,

Geographic Information Services, Inc.

Kevin Stewart, Managing Partner, State & Local Government
Phone: (205) 941-0442 ext. 135 | Email: kevin.stewart@gisinc.com

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Section 1. Firm Qualifications and Experience

A.   Company Overview

GISi is a small business whose core purpose is to create insight through spatial technology. We are a GIS company and have maintained that singular focus since our founding in 1991. We help organizations turn data into insight by leveraging spatial technology merged with tabular data for visualization and analytical capabilities. Our focus is to derive maximum value from our client's existing technology investment. Getting the most out of what our clients already own through redesign, re-engineering, and improvements is what we do best.

GISi has been in business for over 24 years providing GIS solutions for federal, state, and local government agencies. Our ArcGIS-centered solutions and implementations support many facets of government including public works, utilities, land management, public safety, and elections departments. Our core competency is helping clients leverage and realize the full value of GIS in their organization and we focus on four primary areas to deliver on this: Enterprise Systems Services, Application Services, Data Services, and Professional Services. We have worked on large scale enterprise GIS architectures and know how to design platforms with the end-users in mind. We help our clients with technologies that meet their needs of today, while positioning them for growth and evolution in the future. This means the right architecture, database, and application solutions that are non-proprietary, internet based, and easily integrated with other technologies. We have an excellent track record implementing GIS standards and best practices.

GISi is an industry leader in the integration and innovative use of geospatial technology, and is **one of only nine Esri Platinum Partners in the U.S**. As a professional services organization with strong technical capabilities and a culture of service excellence, GISi has an unparalleled reputation of enabling customer success.

With a network of 160 GIS experts across the United States, we bring expertise that has served over 400 local government agencies in all 50 states. The GISi team consists of highly experienced, educated, and certified professionals known for thought leadership and mission critical thinking in the fields of geography, planning, and information technology. Our staff are all full time employees of GISi – we do not utilize contract employees or consultants – which means that our personnel bring with them experience and best practices from similar projects to support new clients.

Reputation for Customer Service & Satisfaction

As will be discussed in further detail in our Project Approach, GISi has established standard project execution controls to ensure we meet our performance commitment, with an emphasis an overall service excellence. GISi is an industry leader with a reputation for enabling customer success, which has resulted in long term relationships with our clients. During the last two years, results from our post-project surveys show that 96% of our clients were satisfied with the value they received from us and would consider using GISi again for their next project. In the information technology field, that level of success is rare.

Proven Background in Geographic Information Systems

We are an award-winning professional services firm, and have been providing best in class solutions to North American and global clients for over 24 years. We are one of the best GIS consulting firms in the world and have the awards to back it up:

- 2015: Esri Private (Internal) Web Application Award
- 2014: Esri Innovation Application Award - GISi Indoors GeoMetri
- 2012: Great Places to Work – Honorable Mention for Best Small & Medium Workplaces
- 2011: Esri Enterprise System Integration Award
- 2008: Inaugural Esri Foundation Partner of the Year Award
- 2008: Department of Navy Chief Information Officer IT Excellence Award
- 2005: U.S. Army Corps of Engineers Research Product Development Team Award
- 2002: Charlotte Region Esri Business Partner of the Year Award
- 1999: Inaugural Esri Charlotte Region Foundation Business Partner Award
- 7- Time Esri MVP Programmer Award

More importantly, our clients receive awards: last year alone, 9 of the 81 annually-awarded Esri Special Achievement in GIS (SAG) Awards were presented to our clients for the work we have done with them. The following clients have been recognized for their achievements with GIS in the Esri community:

- City of Minneapolis, MN: 2014 Special Achievement in GIS Award
- Pinellas County, FL: 2014 Special Achievement in GIS Award
- Roanoke County, VA: 2014 Special Achievement in GIS Award
- Town of Greenville, WI: 2014 Special Achievement in GIS Award
- Middle Georgia Regional Commission, GA: 2014 Special Achievement in GIS Award
- Port of Huntsville, AL: 2014 Special Achievement in GIS Award
- City of Southfield, MI: 2013 Special Achievement in GIS Award
- Centers for Disease Control and Prevention: 2013 Special Achievement in GIS Award
- Arlington National Cemetery, Arlington, VA: 2012 25th Annual GCN Award
- City of Novi, MI: 2012 Special Achievement in GIS Award
- Franklin County, AL: 2012 Special Achievement in GIS Award
- City of Marietta, GA: 2011 Special Achievement in GIS Award
- Delhi Charter Township, MI: 2011 Special Achievement in GIS Award
- City of Appleton, WI: 2011 Special Achievement in GIS Award
- Coastal Georgia Regional Commission: 2010 Special Achievement in GIS Award
- U.S. Marine Corps Training and Education Command: 2009 Special Achievement in GIS Award
- Louisiana National Guard: 2009 Special Achievement in GIS Award

▪ Health InfoTechnics: 2009 Esri Vision Award

We have a proven track record of delivering solutions to our clients that are meaningful and make a difference. Being recognized in the industry, as we have, is certainly a testament to this, but we believe this is truly exemplified by our clients' awards and recognition in the industry.

B. *Relevant Experience*

GISi offers 24 years of relevant experience and industry leadership, and is a clear choice to support the County of San Mateo with its comprehensive GIS needs assessment, development of a conceptual system design, and preparation of an implementation plan for the County's enterprise GIS. We understand what the County seeks to accomplish by partnering with a professional GIS services firm for its GIS assessment, having provided these same services to numerous clients. **In the past four years alone, we have authored 40 GIS roadmaps and strategic plans/assessments,** a complete list of which can be found in Section 6. We have significant experience working on large scale enterprise GIS architectures, and helping clients to meet their needs of today, while positioning them for growth and evolution in the future.

GISi offers the proven experience, leadership, and management processes required to successfully deliver a GIS utilization assessment and recommendations for improvement. **Our focus is to derive maximum value from our client's existing technology investment.** Like the County, GISi is committed to innovation and providing cost effective solutions to your citizens and businesses. GISi will provide a holistic understanding of the County's current use of GIS, as well as recommendations for improvements to better provide for the County's current business needs and support future scalability.

In addition to our experience providing GIS assessments and recommendations, GISi has been designated with partner specialties for Esri's ArcGIS Online and ArcGIS for Local Government, both of which may be options for the County to consider. We're proud to be one of a handful of partners that have achieved both specialty designations. We have also developed an expertise with the Local Government Information Model (LGIM), as one of four piloting partners with Esri, and have since supported multiple local government agencies with successful adoption and implementation. **GISi has completed over 60 ArcGIS for Local Government and ArcGIS Online implementations for municipal and county governments** across the United States. We have developed an unmatched expertise and extensive domain knowledge with supporting agencies with best practices to migrate their data into the LGIM, deploy Esri templates for data accessibility, and integrating GIS with other business systems.

In our experience implementing the LGIM, ArcGIS for Local Government and ArcGIS Online templates are recommended for agencies looking to do more with less, become more relevant, and eliminate dependencies on legacy 3rd party products to streamline workflows, increase operational awareness, and stay current with Esri technology. Based on the information provided, **we strongly believe the County is positioned to successfully leverage Esri off-the-shelf technology to support the majority of its requirements.**

C.   Project Team Organization

Our proposed Project Manager, Michael Parma, has multiple years of experience conducting, writing, and delivering Enterprise GIS Comprehensive Plans, including a service package we call a "GIS HealthCheck™" offering a technical diagnostic of the GIS, an assessment of the business utilization of the GIS, and finally a prescription, or suggestions for the future (please find detailed Healthcheck information in Section 2). Michael has led multiple GIS HealthCheck efforts and his experience will be invaluable for this project. He also has extensive experience with Esri's ArcGIS for Local Government and ArcGIS Online initiatives, and the strategic implementation of the LGIM, and can help the County assess its requirements and whether these solutions are a good fit to achieve its goals. A Certified GIS Professional (GISP), ESRI Certified Desktop Professional, and ESRI Certified Enterprise Associate, he will be responsible for all aspects of the project. Please find his complete resume as Attachment A.

GISi has an additional 160 employees that include a bench of over 70 GIS technical architects, application developers, and analysts to call upon, if needed. Our technical staff includes resources that have attained every certification in the Esri Technical Certification Program, including multiple staff members with the Enterprise System Design Associate designation. If selected, GISi's skilled resources will use staff, processes, and technology that are designed to make sure the County receives outstanding value.

The County's project will be managed by Michael, supported by the following structure of our State and Local business unit. Below please find the organization structure of the entire company, for context.
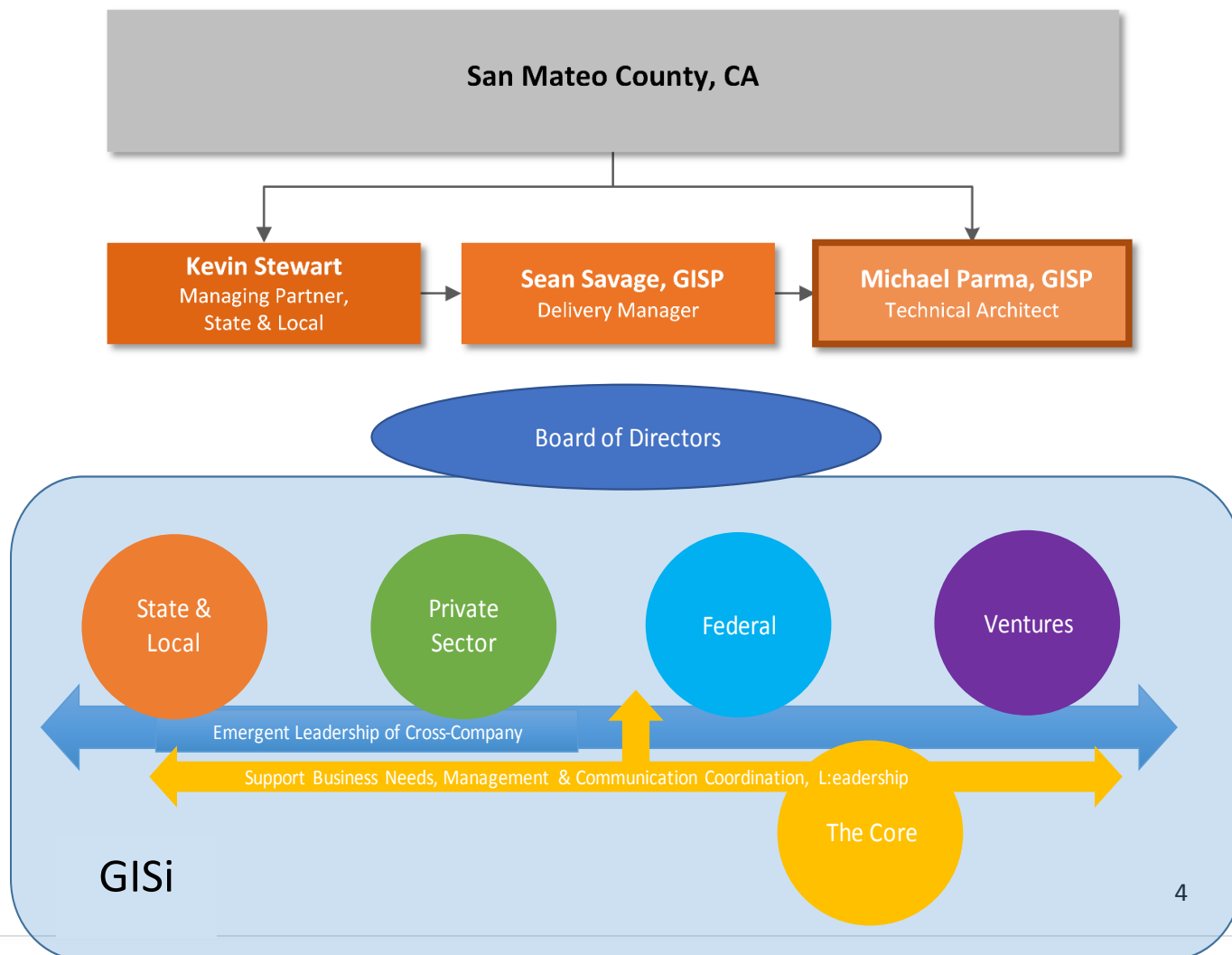
Section 2. Proposed Approach

A.   GISi HealthCheck

It's not uncommon for communities of all sizes, spanning the technical maturity curve, to eventually run into the challenge of not having a clear vision for the path forward and how to get the most out of your GIS investment. If you need a roadmap, are asked to do more with less, are looking for ways to achieve quick wins to build momentum, or have plateaued with GIS, we can give you a hand.

GISi has established an approach toward strategic planning that we call a GIS HealthCheck™, which has been specifically designed to be clear and concise in order to guide planning and tasking. The GIS HealthCheck is essentially a streamlined assessment designed to provide organizations with a technology roadmap that can guide strategic decisions and overall implementation plans. We call this process a "HealthCheck" because we have actually modeled the process after a medical checkup. A medical health check includes diagnostics (tests), a lifestyle assessment, and prescriptions or recommendations for improvement. The GIS HealthCheck has similar components: a technical diagnostic of the GIS, an assessment of the business utilization of the GIS, and finally a prescription, or suggestions for the future and ways to get the most out of your GIS. The GIS HealthCheck is performed by GISi staff, working with your GIS Department and key departmental stakeholders (GIS user community).

The HealthCheck itself can be scaled for small communities with limited resources and infrastructure to large enterprise systems with robust infrastructure and diverse users and systems, such as would be more typical of a County implementation. **With experience gained from years of providing GIS assessments, we help our clients to gain momentum and achieve quicker wins faster than those providing traditional assessments.** Our GIS HealthCheck is extremely proficient in helping organizations such as San Mateo County define short-, mid-, and long-term GIS goals, applying industry best practices to meet your organization's needs faster.
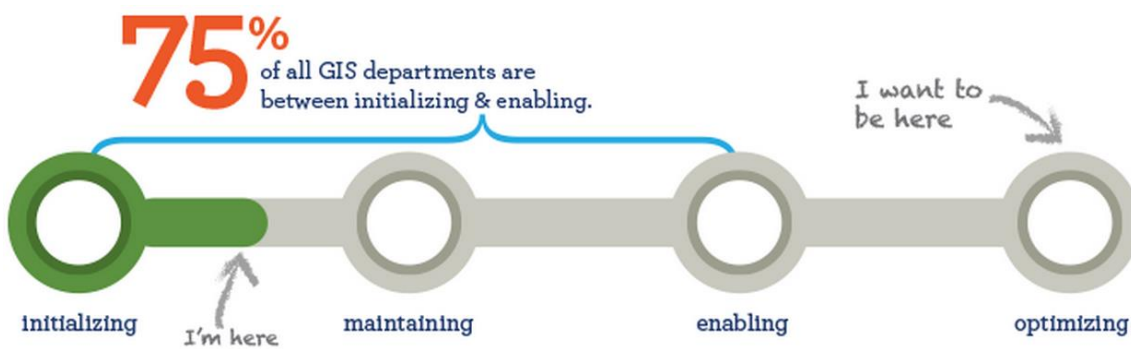
Figure 1. GIS Assessments help first determine where you are, in order to plan how best to reach your goals

B. The "Thud" Factor

Having a strategic plan in place to guide the implementation of an enterprise system, such as GIS, is a fundamental element of most successful organizations, yet sometimes the complexity and magnitude of such a plan can actually impede success. Plans that encompass a comprehensive narrative description of all elements (past, present, and future) make it difficult to glean the most pertinent and actionable items that will help to advance the GIS program.

GISi created the GIS HealthCheck™ in 2007 as an alternative to the "thud" factor. At the time, the GIS industry was (and still is) filled with GIS Needs Assessment/Implementation Plan deliverables that are measured purely on how loud the "thud" is when you drop them on your desk. If you get a loud thud, then you must have a quality deliverable. In actuality, what you may really have is a 150 page document filled with 90% irrelevant boiler plate material that very quickly turns into a dust collecting, bookshelf-filling memento. As a response to this trend, we broke the mold in 2007 and created the GIS HealthCheck™.

The GIS HealthCheck's approach is designed to cut out the extraneous filler material and deliver a concise assessment of your organization's technical and utilization GIS prowess graded on the GIS maturity curve through several sub categories. The report itself is intuitive, clear, and concise, documenting our findings and associated implications. The assessment provides a tailored, organization-specific prescription for your GIS future. Our report is a living document that allows you to track your progress toward becoming an optimizing GIS organization, "checking" each recommendation's checkbox as it gets completed. No "thud" factor and each page has relevance to YOU.

Our deliverable is grounded in industry best practices, drawing from over 24 years in the business; our status as an Esri Platinum business partner (1 of 9 in the US), ArcGIS for Local Government pilot partner (we were there in the very beginning of this initiative), and ArcGIS for Local Government and ArcGIS Online Partner Specialty designations; and municipal/County government clients in all 50 states. Our perspective is unmatched and makes us uniquely qualified to support San Mateo County, CA on this project.

C. Project Approach

GISi's proposed work plan for this project is based on our understanding that San Mateo County is seeking a comprehensive assessment that will accommodate the development of a conceptual system design and implementation plan directed at establishing a scalable and robust enterprise GIS. Our approach is grounded by our extensive experience and a proven framework that has evolved as we generate comprehensive plans for local governments across the country. The approach is simple and elegant, consisting of five (5) key parts:

- Part 1: Project Management & Coordination
- Part 2: Research & Planning
- Part 3: Onsite Discussions with Stakeholders
- Part 4: Technical Maturity Assessment
- Part 5: Develop & Deliver the GIS Comprehensive Plan

Part 1: Project Management & Coordination

GISi is committed to project success and places an emphasis on open communication during all phases of project execution. GISi has several project coordination controls aimed to facilitate communication with the client starting with the initial project kick-off meeting all the way through project closeout with the client satisfaction survey.

Kickoff Meeting

The GISi Team will schedule a kickoff meeting with the County to identify project tasks, billing procedures, and establish a communication plan for coordinating the activities of the project as well as status reporting. GISi will also identify a single point of contact for the project, our proposed Project Manager, Michael Parma.

Bi-Weekly Project Reviews

At the kick-off meeting, we will schedule a bi-weekly project meeting to identify project tasks to be completed, and for the overall project. The specific day of the week for bi-weekly project meetings will be determined by County staff. Prior to each project review meeting, GISi will send the County the current status report document that includes detailed information on schedule and budget progress, tasks completed, upcoming milestones and more. We will use the project review meeting to discuss the status report and upcoming project issues. GISi also has internal project controls to manage the project budget and schedule.

Closure Letter & Satisfaction Survey

Upon completion of work, GISi will send an email to the San Mateo County Project Manager asking for documentation that the County considers the project complete and is satisfied with the deliverables. GISi does not consider a project closed until this confirmation is received. Shortly after project completion, GISi will ask San Mateo County to complete a short satisfaction survey. During the last two years, results from our post-project surveys show that 96% of our clients were satisfied with the value they received from us and would consider using GISi again for their next project. In the information technology field, that level of success is rare.

Project Billing

GISi builds-out a detailed schedule in MS Project upon start of work. Each task is assigned a number of hours, budget and date to complete. MS Project information is then synchronized with GISi's financial package, Unanet. Unanet is used throughout the project to document hours used by each staff member by task and adjust as appropriate. GISi invoices monthly. For lump sum projects, we will bill as a percentage complete, based on the tasks completed as input into Unanet. For time and materials projects, we bill based on the hours per task entered into Unanet.

Part 2: Research & Planning

The Research and Planning task is aimed at establishing context and background that will help make the subsequent discussions more efficient and effective. To support this effort, we will work with the County to acquire as much information as possible in advance of the onsite meetings.

Geospatial Assessment

San Mateo County conducted a geospatial assessment in 2013, which has already been provided and which will be leveraged to help refine our approach to conducting the onsite discussions and conversations. The previous assessment offers background and context along with some vision and direction that will be used to tailor the experience to the County so that we are able to draw out the most relevant information.

At the same time, technology trends and patterns have continued to shift and advance rapidly in the few years since the assessment and as such, the document will be considered a data point and not a definitive guide.

Data

As we kickoff the project, GISi will request representative GIS data that we can explore and evaluate to get a sense for the approach, structure, accuracy, currency, etc. Ideally, the data will be delivered in advance of the onsite meetings so that we have some exposure as we enter discussions with County staff. The specific format(s) and magnitude will dictate the logistics and feasibility, but GISi will work with the County to identify the optimal approach, which can include remote access and direct connection into the County's data if preferred.

Architecture & Licensing

Any documentation the County has on the existing architecture (e.g. diagrams, specifications, etc.) would be helpful for allowing us to understand the current scope of the system and will provide further context for the discussions with ISD/GIS. Likewise, a summary of existing GIS software inventory and licensing will allow us to understand potential existing capability and capacity as we enter the discussions.

Part 3: Onsite Discussions with Stakeholders

Central to the HealthCheck approach and any comprehensive assessment, are discussions with the GIS stakeholders. Stakeholders are often a diverse group spanning existing technical and GIS staff to novice or potential users.

Over the course of many assessments, we have identified a process that combines a structured approach with the necessarily adaptive discussions to help identify the core needs of the participating groups. This approach sets aside the more rigid questionnaire style assessments and associated formal interviews in favor of topic driven discussions. The discussions tend to establish a more comfortable environment, which in turn allows information to flow more freely, especially from the more casual and potential user base.

The discussions are guided by GISi staff and span the following topics:
- Primary Departmental Function
- General Understanding of GIS within the Department

- Core Software Utilized to Accomplish Business Objectives
- Primary Utilization of GIS (e.g. Mapping, Analysis)
- Data (e.g. Consumed, Generated, Desired, Concerns)
- Technology (e.g. Hardware, GPS, Mobile Devices)
- Analytical Requirements (Current and Desired)
- Training Opportunities (Current or Desired)
- Perception of GIS within the Organization (e.g. Awareness, Responsiveness, Quality, Access)

Initiation

The GISi team will hold a brief departmental and stakeholder kickoff meeting that will include a presentation followed by a question and answer session. The presentation is intended for all County personnel that are potential stakeholders in the GIS program. The purpose of this meeting is to introduce the stakeholders to GISi and to review the goals of the comprehensive planning process and the HealthCheck approach. The discussions will begin directly following the kickoff and information meeting.

We encourage as many departments as is feasible and consistent with the objectives of the effort to participate in the HealthCheck, but the County will have the ultimate decision as to which departments, agencies, and individuals will participate in the onsite meetings. Based on the RFP and the previous geospatial assessment, we assume that the core participating departments would include:

- Public Works
- Clerk, Assessor, Recorder, Elections (CARE)
- Planning & Building
- Health System
- Information Services Department (ISD)
- Criminal Justice (Sheriff, Probation, and North California Regional Intelligence Center)
- Human Services Agency
- Parks
- Housing
- Public Safety Communications
- Potential GIS Users (Controller, Human Resources, LAFCo, County Manager's Office)

To accommodate these groups, we are proposing 3.5 days onsite with each departmental discussion ranging from 45-90 minutes, depending on the nature, complexity, and participating groups. Additionally, we will have extended conversations with the technical team (ISD and GIS) to discuss infrastructure, utilization, technology standards, and more. During this time, we will engage with staff to get a deeper understanding of the underlying technical support structure, leaving the last half day onsite for follow-up conversations and questions.

Part 4: Technical Maturity Assessment

Inherent to the assessment process is a determination of where the County currently sits within the spectrum of the technical maturity curve. This is an important element of the process to ensure that the recommendations that comprise the comprehensive plan are relevant and feasible. To facilitate this

assessment, we will gather information across a range of categories both from the departmental discussions, but also from the more in depth sessions with ISD/GIS staff.
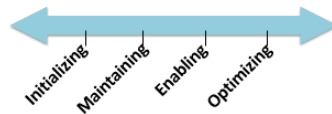
GIS Technical Diagnostics

GISi will perform a technical diagnostic of the County's current GIS. We will document our observations and implications, which will eventually drive our recommendations around each category. The GIS technical diagnostic categories include:

- Data Storage Analysis
- GIS Applications & Software Analysis
- Current Environment and Technology Analysis

Data Storage Analysis

GISi will perform a detailed analysis of the existing data storage strategy and structure at San Mateo County. This will include documenting the existing data layers and future data layers or databases required by each department. GISi will focus on the organization of the current data and database, data quality, data storage, and metadata. We will use industry standard tools to review the existing data and structure of the database. GISi will grade the County on a maturity level for each of these categories. Our technical diagnostics maturity levels and definitions are illustrated below:

GISi will establish an inventory of data provided and referenced during the planning process. This list will encompass existing data layers within the County's enterprise structure as well as departmental data that can be identified, if not already at the enterprise level. In addition to the existing data, any requested data from the departmental interviews will be included and evaluated for potential gaps in content, quality, or completeness.

GISi will provide recommendations for improvement to the existing data storage, best practices in data maintenance, database procedures, and access to non-GIS related data. As appropriate, we will perform a high-level analysis ("Crosswalk") of existing data against Esri's Local Government Information Model (LGIM). The data crosswalk will help to further identify gaps within the existing County data compared to the LGIM. Finally, GISi will document the benefits and potential risks of utilizing the LGIM.

GIS Applications & Software Analysis

GISi will review the existing utilization of GIS licensing and software. The review will include all existing third party extensions, web applications, and mobile applications currently being utilized by the County. In addition to reviewing the existing GIS applications and software, GISi will review other County Enterprise Business Systems and how they relate to GIS including, but not limited to:

- Permitting
- Work order
- Billing
- CAMA
- Assets

GISi will grade the County on a maturity level for the GIS Applications and Software usage. The maturity levels and definitions for this section are illustrated below:
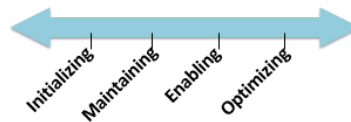
The overarching goal for this exercise will be to identify opportunities for GIS integration and providing access to these systems and data via the GIS.

GISi will provide recommendations on the utilization of existing licenses, software, and integration with existing business systems. GISi will also provide a detailed analysis on the adoption of Esri's ArcGIS for

Local Government maps and apps and the LGIM. This will include the benefits and any potential risks with adopting ArcGIS for Local Government.

Current Environment and Technology Analysis
GISi will assess all technology infrastructures and hardware as it relates to the overall GIS architecture. GISi uses the most advanced tools in evaluating GIS system architecture including the Esri System Designer Tool to assess the current system and sizing for the future.

GISi will:
- Review the Current System Architecture
  - Network Connectivity
    - Connection Types
    - Physical Locations
    - Bandwidth Utilization
- Review the Current System Hardware
  - Servers
    - Operating Systems
    - Hardware specifications
    - Backup/Recovery
    - Routers
    - Switches
  - Security

GISi will grade the County on a maturity level for the GIS Architecture along the same definitions as above.

GIS Business Utilization Assessment
GISi will perform a GIS business utilization assessment of the County's current GIS to include:
- Governance & Funding
- Awareness & Training
- Functional Adoption
- Enterprise Deployment & E-Government

GISi will grade the County on a maturity level for each of these categories. Our GIS Utilization maturity levels and definitions are illustrated to the right.
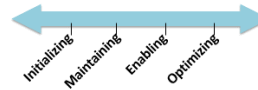
☑ **Maturity Levels**
- *Initializing:* GIS is in the formative stages, either recently established or with only basic capabilities
- *Maintaining:* GIS solutions are deployed, most resources supporting their use with modest enhancement effort
- *Enabling:* GIS solutions are deployed with resources helping functional areas leverage them for business improvement (productivity, service, quality, etc.)
- *Optimizing:* GIS solutions are being used to create new capabilities or business strategies

Governance & Funding of GIS Analysis
Governance and funding relate to how GIS activities are managed, organized, and funded. GISi will analyze San Mateo County's GIS governance and funding, and document our findings and their implications.

Awareness & Training of GIS Analysis

Awareness and training relate to how GIS capabilities are communicated and training programs to allow staff to leverage them. GISi will analyze the County's GIS awareness and training programs, documenting our findings and their implications.

Functional Adoption of GIS Analysis

Functional adoption relates to how GIS is deployed across various departments within the County. GISi will analyze San Mateo County's GIS functional adoption, and document our findings and their implications.

Enterprise Deployment & e-Government Analysis

Enterprise Deployment & e-Government relates to the perspective of how GIS is used (from a desktop solution to departmental to an enterprise approach). GISi will analyze the County's GIS enterprise deployment & e-government, document our findings and implications.

Operational Procedures Analysis

GISi will perform a review of operational procedures for GIS at the County. Operational procedures are necessary for clarifying responsibilities, the GIS business needs and standards for support of GIS within the County. This task will identify the current procedures and workflows associated with the use and maintenance of GIS throughout the County. GISi will review any existing Standard Operating Procedures (SOP's) for GIS including:

- Data Quality Control and Quality Procedures
- Data Standards
- Metadata Procedures (Creating, Updating, Editing)
- Data Acquisitions Procedures
- New GIS Application Request Procedures
- GIS Data Error Submission Procedures
- GIS Application Modification or Additional Functionality Request Procedures
- Database Maintenance Procedures
- Backup and Recovery Procedures
- GIS Communications Procedures
- System Integration Procedures
- Reviewing, Reconciling and Posting Procedures

GISi has extensive experience in reviewing existing SOPs and developing recommendations and additions to existing procedures. We will use best practices and domain knowledge to make recommendations to improve the existing procedures in the spirit of increased efficiencies.

Maturity Assessment Summary

Throughout the documented categorical assessments included in the final deliverable, we will outline our key observations that were used to assess the level of maturity along with a list of implications of those observations. At the end of the maturity assessment, we will provide a concise summary of the levels for each category and an overall evaluation of organizational maturity.

We will share a draft of our assessment of the current environment, structure, and process with the County through a findings report to ensure accuracy. Feedback from the County may invite further dialog on specific topics for clarification, but the document is ultimately intended to be a third party evaluation wherein the maturity level is not influenced by direct requests, but rather through information and documentation. The assessment will be included as an element of the final report.

As mentioned, the current state of the County's GIS will serve as a foundation for subsequent recommendations included in the comprehensive planning process. Likewise, the process of performing the assessment will allow GISi to become familiar with the strengths, weaknesses, flexibility, and constraints within the County, which represent important practical considerations and context to allow the plan to be appropriately tailored for success.

Part 5: Develop & Deliver the GIS Comprehensive Plan

GISi will develop the Comprehensive GIS Plan for San Mateo County to serve as technical roadmap that can help the County advance the GIS program and increase overall technical maturity. As technical maturity increases, so too does the degree to which the County is able to take advantage of investments in hardware, software and people. Each incremental improvement tends to correspond with increasing rates of return through positive feedback. That is, better infrastructure encourages utilization, which increases skill, experience and knowledge, which in turn translates to more informed and specific input from users to administrators therefore allowing the system to evolve and repeat the cycle.

The plan itself will be presented in a concise and streamlined format for easy interpretation and translation into tasking. The scope of the plan is intended to span short-, mid- and long-term as dictated by the pace of technology change. That is, the short-term is typically immediate (quick returns on investment) and the long-term is currently considered only two (+/-) years.

The general layout of the document is as follows:
- Executive Summary
- Current Environment and Findings
- Recommendations
- Phased Implementation Plan & Budget including results from:
  - Comprehensive Needs Assessment
  - Technology Readiness Assessment
  - Enterprise GIS Database Readiness Assessment
  - Organizational Readiness Assessment

Executive Summary
The executive summary will provide a summary of the goals of the Enterprise GIS Strategic Plan, the current environment and findings, and the recommendations for San Mateo County. This section is intended to reflect the plan at the highest level to identify the most significant findings or recommendations in a manner that can be reviewed quickly. The summary sets the tone for the rest of

the document and allows readers to get a sense for the key takeaways so that they can explore further as appropriate.

Current Environment and Findings

This section will be comprised of the final current environment and findings report that will have been shared previously with the County in draft form. This includes the information collected during both the research and planning and onsite discussions portions of the project. This will be presented as a series of key observations and implications along with a maturity assessment of each section within the technical diagnostics and business utilization evaluations.

Recommendations

GIS will provide a complete list of recommendations to the County that will focus on the many interrelated components necessary to realize a functional and robust County-wide Enterprise GIS. In large part, these recommendations will be organized according to category, such as technical and business utilization.

The recommendations will likewise be presented both at an overarching enterprise level (items necessary to sustain and grow the underlying system or recommendations that span many groups) and at the departmental level (actions that may be more thematically specific to any one group).

As discussed, the overarching enterprise recommendations will be presented according to short-, mid- and long-term actions. Commonly, the heart of the recommendations and the most impactful actions will be outlined in the short-term, which are in consideration of and commonly position for the longer-term objectives and goals. In large part, the overarching recommendations will correspond to the same evaluation categories used in the maturity assessment:

- Technical Recommendations
    - o Data and Database (Warehouse)
    - o Software and Application
    - o System Architectural
    - o Hardware
    - o Network
    - o Security
- Business Utilization Recommendations
    - o Governance & Funding
    - o Awareness & Training
    - o GIS Functional Adoption
    - o Enterprise Deployment & e-Government

Much of the information gathered through the departmental discussions will influence the direction of the enterprise strategy and therefore will be rolled into the overarching recommendations. As such, departmental recommendations, are presented more succinctly to document specific considerations and recommendations around applications, data, training, and coordination. Within these sections, we also outline the top three (3) priority actions for each group.

Architecture Recommendations

The success of an enterprise GIS is often directly linked to the ability of the underlying architecture to support the demands and functionality of the user base. A system that is slow to respond or affected by unpredictable availability can quickly undermine user confidence, which can reduce adoption or

encourage behavior that is contrary to the goal of the enterprise (i.e., maintenance of localized data, reduced coordination, etc.).

To establish a system designed for success, GISi will specifically gather information during the onsite discussions that will feed into a modeling exercise intended to identify the recommended approach to system design and corresponding licensing requirements. System design is often centered on capacity planning and analysis, which aim to ensure that the County's performance objectives can be achieved both now and in the future.

The capacity planning and system design process is accomplished by leveraging tools and models developed by Esri, such as the Capacity Planning Tools and System Designer. We will gather information such as:

- Number of users by type (feed into concurrency models)
- Workflows (desktop vs. web, editors vs. viewers, dynamic vs. cached, etc.)
- Licensing
- Network connectivity
- Hardware options and preferences

The result of this process will be both a logical representation of the preferred architecture design as well as a detailed recommendation of system specifications. Where identified by the model, and as dictated by the County's flexibility, we will also document potential system constraints. Both the inputs and outputs to this exercise will be provided to the County and the findings will be incorporated into the comprehensive plan.

Phased Implementation Plan & Budget
Throughout the previous sections, we have indicated that we will be making specific recommendations to the County to guide the successful implementation of an enterprise GIS. Within the comprehensive plan, the recommendations will be comprised of some tasks that may range from day long exercises to full projects that require funding and planning. As part of the comprehensive plan, we will also coordinate with the County to identify a series of core projects or initiatives for which we will provide a more detailed approach.

Each detailed project will be outlined as follows:

- **Description** offers a concise summary of the recommended project
- **Priority** indicates the relative importance of the project
- **Timeframe** indicates the relative timeframe for the initiation of the project (e.g. 1-3 months, 6 months, 1 year, etc.)
- **Resources** refers to who should be involved in the project (internal staff or vendor/consultant)
- **Implementation** indicates an estimated duration of the project
- **Activities** provides a high-level list of actions required to successfully complete the project
- **Estimate** is intended to provide a budgetary estimate for the project (assuming GISi were to implement)

Re-establish Enterprise Standards

❑ **Description**: With ever changing technology and business requirements, the County ITS/GIS group has dynamically adapted to meet user requests, which often doesn't allow time to assess impacts and redefine standards. Entering into a new 5-year strategic plan offers the perfect opportunity to revisit, revise and republish enterprise standard operating procedures, including documentation requirements (metadata), data maintenance procedures (ownership, QA/QC, etc) and software dependent methods and workflows. This effort would also help address issues commonly reported across the Departments and ensure that projects proposed in the Strategic Plan are building from a re-solidified foundation.

- **Priority**: High
- **Timeframe**: Immediate

- **Resources**: County staff
- **Implementation**: 3 months

- **Activities**:
  – Establish a team from ITS/GIS group.
  – Obtain and review existing SOP documentation.
  – Identify missing SOPs or implementation gaps, focusing on data and metadata management and delivery.
  – Contrast existing standards with changes in core technology.
  – Create or update standards documents.
  – Share with stakeholder group.

Project Deliverables

The GIS HealthCheck project deliverables will include:

- Kickoff meeting minutes
- Status reports
- Onsite Interviews (GIS user departments and agencies)
- Draft Findings Report
- Draft Comprehensive GIS Plan Document
- Final Comprehensive GIS Plan Document
  - o Comprehensive Needs Assessment
  - o Technology Readiness Assessment
  - o Enterprise GIS Database Readiness Assessment
  - o Organizational Readiness Assessment
  - o Implementation Plan
- Final presentation of the Comprehensive GIS Plan

The Final Comprehensive GIS Plan will be delivered in hard copy and digital format. All other deliverables will be in digital format (MS Word and PDF).

D.   Logistics

Communications

During the project kickoff, GISi will introduce the team that will be implementing the comprehensive planning project for the County. The core activity of the project will be performed by a dedicated GISi Technical Architect who will also serve as the primary point of contact for the County through whom all communications will be funneled. On any project with GISi, we leverage our Technical Architects as both

the technical lead and visionary on our projects as well as the resource responsible for project controls and communications. The Technical Architect will facilitate all coordination of additional resources required to execute any given task. Full contact information will be provided during the kick-off process.

People

At GISi, we look at every project as a partnership between us and our clients. As such, we would like to establish a dedicated point of contact at the County through which we can coordinate and facilitate project activities. Throughout the course of the comprehensive planning project, we will certainly talk with many people at the County, but knowing that we can funnel requests, guidance, and coordination through a single person helps to streamline the process.

The point of contact on the County side will be responsible for coordinating schedules for the staff that will participate in the planning process as well as arranging for any other required facilities and resources. The County point of contact will help to compile feedback from the groups as draft documents are shared in preparation for a final deliverable.

In addition to the person responsible for project management for the County, we will need access to County staff during the process to provide input. The individuals will be identified by the County, but should include appropriate and representative staff from each participating group to ensure that the information gathered can drive a successful plan. Likewise, we will need access to people that represent the ISD team and GIS technical/administrative staff.

Facility

Our process does not require extensive resources and in terms of a physical space we simply request that the room be large enough to accommodate the number of people participating in the discussions (most commonly 5 +/- for any given meeting). As we initiate the onsite meetings, we also offer a kick-off meeting/presentation that may encompass a broader audience that requires a larger space.

Ideally, and in order to optimize our time onsite, we request a dedicated room for the duration (or at least for each day). This enables us to spend more time in discussions and refining notes and less time traveling between locations for meetings.

Resources

Every HealthCheck and comprehensive planning process is unique as, in fact, is each meeting within that process. To accommodate potential discussions and relevant demonstrations (either by GISi or by the County), we would ideally request a room with a projector and an internet connection. Whether the internet connection has network access will be at the discretion of the County, but is not strictly required for our process.

Section 3. Claims and Violations against Your Organization

There are no violations or claims against GISi, currently or within the past five years.

Section 4. Cost to the County for System and Implementation Services

In the previous section (Section 3, Item C), we detailed the approach that we will take toward the implementation of services for the Comprehensive GIS Plan, providing a thorough breakdown of the services we are proposing.

To complete these services, we are proposing a firm-fixed price of **$32,000** which includes all travel expenses (associated with the onsite assessment task). We do not anticipate any additional costs within the context of this effort. The proposed project is focused on the development of a comprehensive plan and is not associated with any software licensing or inherently tied to subsequent services to implement the plan.

For further clarification, below please find a summary of the tasking and a potential schedule for the project:

	Month 1	Month 2
Part 1: Project Management & Coordination		
Kick-Off Meeting	▪	
Coordination & Logistics	▪	
Status Meetings/Reports, Communication	▬▬▬▬▬▬▬▬▬▬▬▬▬	
Part 2: Research & Planning		
Geospatial Assessment Review & Agenda Development	▪	
Architecture Review	▪	
Data Review	▪	
Part 3: Onsite Discussions with Stakeholders		
Kick-Off Presentation and Q&A	▮	
Departmental Discussions	▪	
Meetings with ISD & GIS	▮	
Follow-Up Questions/Conversations	▮	
Part 4: Technical Maturity Assessment		
Technical Observations & Implications	▪	
Business Utilization Observations & Implications	▪	
Draft Findings Report Development	▪	
Finalization of Findings Report		▪
Part 5: Develop & Deliver the Comprehensive Plan		
System Capacity Analysis		▪
Enterprise Architecture Design		▪
Short-Term Enterprise Recommendations		▪
Mid-Term Enterprise Recommendations		▪
Long-Term Enterprise Recommendations		▪
Departmental Recommendations		▪
Project Descriptions, Plans & Budgetary Estimations		▪
Draft Comprehensive Plan		▪
Finalize, Present & Delivery the Comprehensive Plan		▮

Section 5. Cooperative Purchasing and Cost of Possible Additional Services

The nature of the proposed project is a discrete assessment of San Mateo County and not a proposal for open services that would be conducive to extending the contract to other cities or agencies in the region. As such, the proposed contract is specifically for use by San Mateo County.

With that said, if there are agencies or municipalities that should be represented within the context of the assessment, we are willing to discuss external participation in the process through the same mechanism (onsite meetings). The participation of those agencies, however, will have to fit within the designated allocation of time onsite. Likewise, the findings and recommendations will not be delivered through a separate document, but rather incorporated as a department would be.

With respect to additional services associated with the proposed comprehensive plan, our intent is to identify the relevant and feasible additional services for the County through this process. As a full services GIS Consulting firm, we offer an extensive and diverse suite of solutions that we may be able to foresee as part of the County's future, but the best guidance and most specific direction will come through the comprehensive plan.

Section 6. References

In the last four years, we have worked on over 40 GIS roadmaps and strategic plans. A complete list is below, with a few detailed project descriptions and corresponding references on the following page.

GIS HealthCheck Assessment Experience

- Aqua Water Supply Corporation
- Bannock County, ID
- Bibb County, GA
- Cherokee County, GA
- City of Atlanta Dept. of Watershed Management
- City of Adrian, MI
- City of Alexander, AL
- City of Altamonte Springs, FL
- City of Austin, TX
- City of College Park, GA
- City of Daytona Beach, FL
- City of Eau Claire, WI
- City of Farmers Branch, TX
- City of Flint, MI
- City of Fort Worth, TX
- City of Hoover, AL
- City of Marietta, GA
- City of McAllen, TX
- City of Sioux Falls, SD
- City of Southfield, MI
- City of Spokane Valley, WA
- City of Sterling Heights, MI
- City of St. Charles, IL
- City of Tuscaloosa, AL
- Crow Wing County, MN
- Curry County, OR
- Dekalb County, GA
- Emmet County, MI
- Gwinnett County, GA
- Harris County Flood Control District
- Highlands County, FL
- Jackson County, OR
- Josephine County, OR
- Lacrosse County, WI
- Livingston County, MI
- Miccosukee Tribe of Indians of Florida
- Mifflin County, PA
- Newton County, GA
- Outagamie County, WI
- Sheboygan County, WI
- Shelby County, TN
- Shelby Township, MI
- Trempealeau County, WI
- Village of Key Biscayne, FL
- Walworth County, WI
- Wyandotte Municipal Services

We also bring unique local experience, with recent work for the City of San Mateo IT Department, providing GIS professional services and support for Local Government Information Model design, conversion and implementation. The City of San Mateo is quickly evolving into one of California's premier GIS programs, and the City has trusted us to help them build their GIS enterprise architecture.

Please find detailed project narratives, with references' contact information, on the following pages.

City of San Mateo, CA: Local Government Information Model Design, Conversion & Implementation

When the City of San Mateo, California chose to migrate to Esri's GIS software from Intergraph, a primary objective was to establish alignment with the ArcGIS for Local Government solutions to aid succession planning. Their goal was to establish a widely used data schema which would aid in the recruiting of quality future staff. In the past, the City struggled with organizing their spatial data from a variety of locations and formats. Improving the addressing and fire planning processes and supporting an ongoing permitting system implementation provided the initial motivations.

References:

Peter Owen
Deputy Director of IT
(650) 522-7074
powen@cityofsanmateo.org

Patrick Crevelt
GIS Coordinator
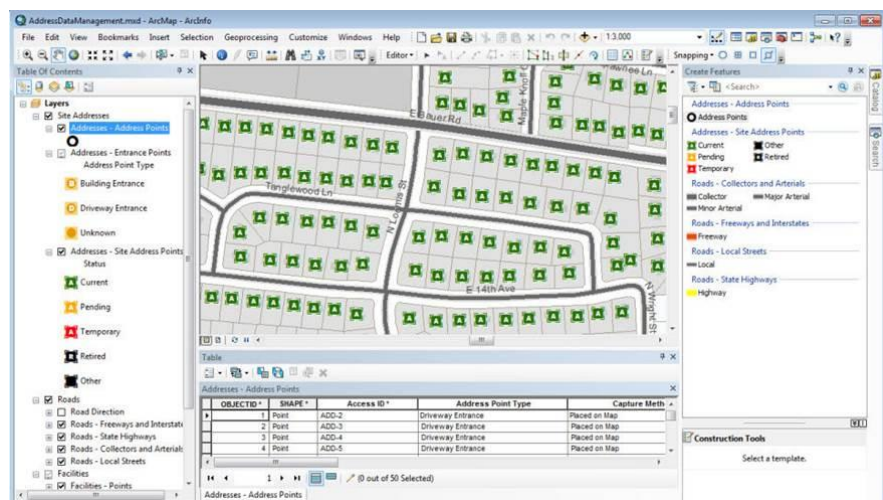(650) 522-7064
pcrevelt@cityofsanmateo.org

The first phase of the project was to implement Esri's Address Data Management template. GISi performed the necessary planning and created the extract, transform, load (ETL) process to migrate the City's current data into the ArcGIS for Local Government data model. Through a remote knowledge transfer, we loaded the City's SDE database and taught their staff how to use Esri's editing tools in a versioned editing environment. A similar process was used for the Pre-Incident Planning of emergency services. Though the next planned step was to implement the Planning and Notification application, the City chose instead to perform a full adoption of the ArcGIS for Local Government model upon which to build its EnerGov permitting system. In this final project phase, we assisted the migration of over 30 priority layers into the LGIM database, including extending the model for layers that were not a good match. To support a single data repository, more than 120 layers were eventually migrated into the central database.

The ease of use of the Addressing and the Pre-Incident editing templates encouraged the City's users to more broadly adopt the ArcGIS for Local Government data model. This has allowed them to establish a single, central data repository built upon a widely used standard to support their permitting system. They also anticipate new users will require less time to learn the data model than the previous ad hoc structure. The staff hired with

The Address Data Management tools implemented for San Mateo were free as part of Esri's ArcGIS for Local Government initiative

previous ArcGIS for Local Government experience will improve the future transition, a key element for their succession planning. The City plans to resume implementation of the ArcGIS for Local Government planning applications in a future project phase.

Gwinnett County, GA: GIS Strategic Plan and Services

In 2011 GISi was selected as a GIS services provider by Gwinnett County, GA as part of their broad based Land Information Systems (LIS) Services annual contract with (4) one year options to renew. The purpose of the contract is to provide GIS services such as data development, application development, application customization and other GIS services required to further develop the County's existing GIS and LMIS, including a 5-Year Enterprise GIS Comprehensive Plan. We have highlighted the projects and services provided to Gwinnett County as part of this contract below.
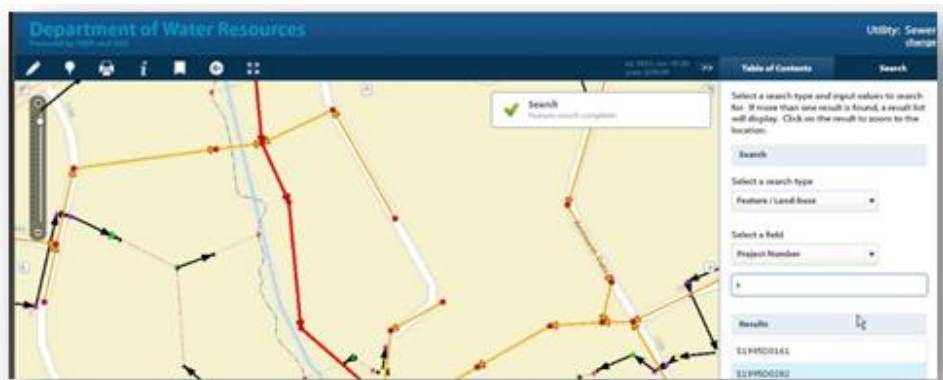
> **Reference:**
> Sharon Stevenson
> GIS Manager
> (770) 822-8720
> Sharon.stevenson@gwinnettcounty.com

5-Year Enterprise GIS Strategic Plan

Gwinnett County GIS Department sought to update their enterprise GIS Strategic Plan. Through onsite visitation, GISi provided a technical diagnostic of the current GIS system and an assessment of the business utilization. The recommendations included implementation strategies for industry best practices, identified new business utilization opportunities for location information, and facilitated an integration path with existing business systems.

Department of Water Resources (DWR) – Web Viewer

DWR implemented GISi's Flex framework for its internal web viewer. This web application enabled DWR to reduce their desktop footprint by over 100 licenses and offer a more intuitive solution to its current read-only users. Today the web viewer is a critical component that supports operations and streamline's workflows. GISi started the project with a requirements gathering session onsite at DWR. We then setup and configured the ArcGIS for Server environment in both development and production at DWR. Map and web services were created to provide the foundation for secure web and mobile applications accessing infrastructure data and related as-built and inspection documents. Additional services allowed integration with DWR's Lucity work order management system. The web viewer has enabled DWR to streamline access to data via the web and supports both web and mobile users.

Address Data Management

Gwinnett County contracted GISi's services to establish an updated addressing system to support their business processes. After an onsite needs assessment and process review of their workflows, we converted these parcel-based addressing to address points through an ETL process into Esri's Local Government Information Model. After configuring the Address Data Management template, we provided onsite knowledge transfer on use of the construction tools. The County now has a more comprehensive addressing database with efficient maintenance tools. Multiple departments including Planning, Assessment, and 911 are able to reference a single authoritative addressing source.

## McHenry County, IL: Annual GIS Services Contract

GISi provides the McHenry County GIS Department with consulting services to maximize their significant investment in Esri technology. While GISi's core staff augmentation responsibilities have been in the direction of development, we have also been involved in administration and automation of backend services or processes, application development and deployment, technical support for IT related issues or configuration, and **high level strategic planning.**

> **Reference:**
> Nicole Gattuso
> Director of GIS
> (815) 334-4496
> NLGattuso@co.mchenry.il.us

Though GISi has performed onsite services for the County, primary staff augmentation is facilitated remotely in the form of development, scripting and administration. Key among the tasking for GISi was to provide development services for a Crime Mapping application for the County. Over the span of a six month period, the GIS Department took a complicated idea from conceptualization to a crime mapping program that allows the McHenry County Sheriff's Office (MCSO) to fight crime more intelligently. Under direction of the County, GISi facilitated development for the MCSO Crime Mapping Program, which includes a public access site where the general public can review crime trends in County jurisdiction and send tips to CrimeStoppers anonymously.

The website that was developed provides the public a powerful new tool in their efforts to help law enforcement. The MCSO Crime Mapping Program also includes an internal crime map that is very user friendly and is now used to create monthly crime trend reports in minutes (saving the MCSO Intelligence Unit about 30 man hours each month). It is also used to create daily and weekly crime reports that each shift commander can use to allocate their resources more efficiently to provide the citizens of McHenry County with even higher quality public safety. The McHenry County Emergency Telephone System Board also worked on this collaboration by providing data for the MCSO Crime Mapping Program.
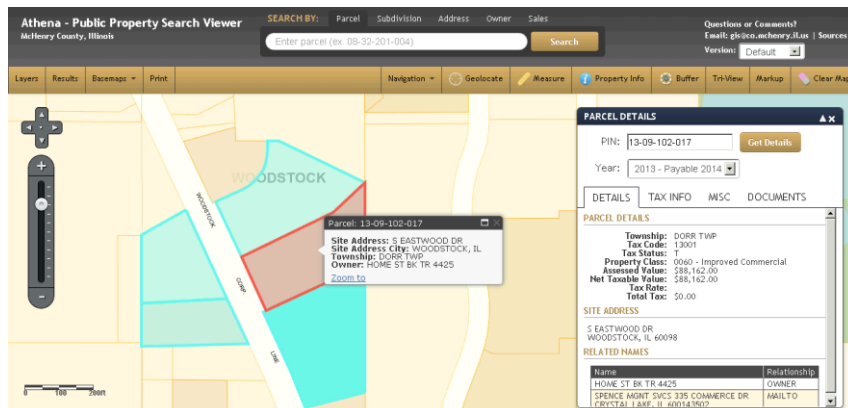
GISi has also supported development against existing applications (Athena, Planning Viewer, Construction Viewer, etc.) to address legacy defects and extend functionality. Recently, GISi effort has been applied toward re-writing the County's property information viewer (Athena) in HTML5 and using the JavaScript API. The County's existing release of Athena leverages the Esri Web ADF, a dated technology that constrained the potential upgrade of the Esri software infrastructure. At the same time, the County also wanted to make Athena more broadly accessible to users across multiple platforms and devices (PC, tablet & phone), which drove the final decision for the language and technology that underlie the re-write. At the request of County staff, the Athena re-write resulted in a user interface that effectively mirrored the existing application, with only minor tweaks to freshen the UI, to mitigate the impact of transitioning on end users. GISi guided the process, starting with UI wireframes through to the responsive design (adapting interface to variable and restricted screen real estates).

City of Southfield, MI: GIS HealthCheck & ArcGIS for Local Government Jumpstart Projects

These projects demonstrate our ability to develop an enterprise GIS Plan and to provide services aimed to help a local government embrace Esri's ArcGIS for Local Government. This is also an example of upgrading the enterprise GIS to the latest version of Esri ArcGIS technology.

> **Reference:**
> Sally Price
> GIS Coordinator
> (248) 796-4814
> sprice@cityofsouthfield.com

The **HealthCheck** performed for the City of Southfield, MI yielded benefits that were realized by the staff from its GIS program and had a positive impact across the organization. The underlying recommended infrastructure enhancements in terms of data, applications, people, and training ensured cost avoidance, effectiveness improvements, and heightened levels of customer service; many of these benefits have been obtained well beyond the immediate timeframe. Additionally, **the City of Southfield was able to use the GIS HealthCheck to get approval for a 3-year budget** that supports one (1) full time GIS Analyst and access to part time developers.

With the help of GISi, Southfield also opted to take advantage of **Esri's ArcGIS for Local Government** initiative to deploy a suite of applications with highly targeted functionality to complement the Silverlight and GISi OneView application. As part of this effort and to centralize access, the team implemented the local Maps & Apps gallery to serve as a one-stop-shop portal. With an "app-a-month" deployment strategy, the City's implementation caught the attention of Esri and went a long way toward gaining the City a Special Achievement in GIS (SAG) award. Likewise, the rapid and visible progress also captured the attention of City administration and helped the GIS group justify the investment in an Esri ELA, which further boosted the momentum of the overall GIS program.

One of the early successes for the City of Southfield/GISi team was the development of a publicly accessible Internet Mapping application (http://maps.cityofsouthfield.com/GISViewer/) that offered users comprehensive functionality. The application provides a wealth of geospatial information to its residential and business community, supporting public service delivery 24/7. The City and GISi migrated the Web ADF application to the ArcGIS Server 10 platform using
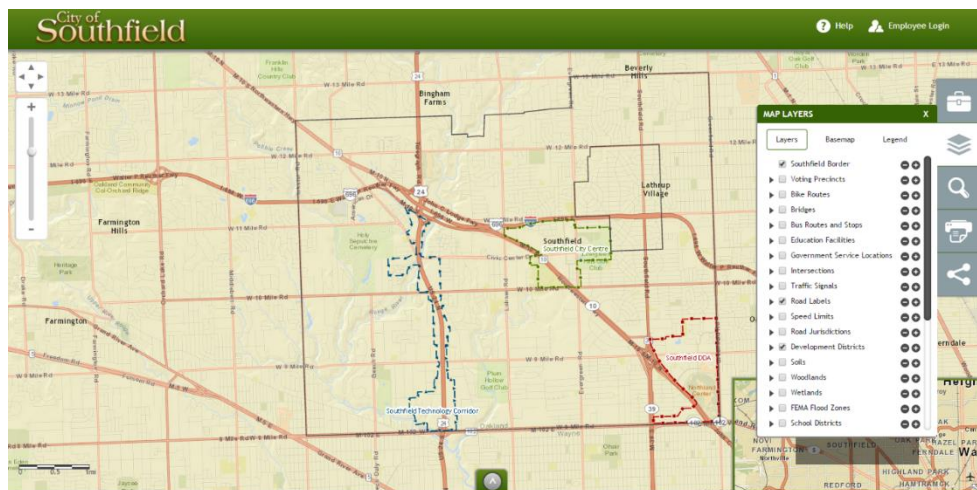
Microsoft Silverlight™ version 4 in 2011 and this quarter the City is launching GISi's HTML5/JavaScript application, 'GISi OneView.' Resources like the City's web-based mapping applications reflect the type of investments Southfield is making to ensure a vibrant business climate exists. This site helps promote the growth of existing business and attract new investments into the City while providing vital information to its citizens. Residents and nonresidents alike are able to view property ownership, zoning, voting districts,

refuse and recycling information and many more commonly used data layers. "The City of Southfield has leveraged its investment in ArcGIS Server technologies by responding to the needs of its citizens, business and community leaders with the implementation of the mapping application," said Sally Price, GIS Coordinator at the City of Southfield.

Our client had these comments regarding our support: "In today's economic climate, ArcGIS for Local Government offers us the best opportunity to deploy low cost applications that support our business, provide citizen engagement, and allow us to become more efficient," said Ms. Price. "GISi helped us to realize this vision and Esri's commitment to support these applications ensures compatibility with future ArcGIS software release cycles." For more information about Destination Southfield, please visit: http://blog.gisinc.com/2012/01/13/gisi-ag4lg-deployment/.

Section 7. Statement of Compliance with County Contractual Requirements

GISi reserves the right to address some of the terms in the sample standard contract provide based on the work we are proposing and we will be prepared to submit a red-lined template for negotiations if we are selected for award.

Conclusion

GISi has proven enterprise GIS strategic plan experience covering the requirements of this RFP. We understand what the County seeks to accomplish by partnering with a professional GIS services firm for its GIS assessment, having provided these same services to numerous clients. GISi will provide the County a holistic understanding of its current use of GIS, as well as recommendations to better provide for the County's current business needs and support future scalability. **With experience gained from years of providing GIS assessments, we help our clients to gain momentum and achieve quicker wins faster than those providing traditional athenssessments.** Our GIS HealthCheck is extremely proficient in helping organizations such as the County define short-, mid-, and long-term GIS goals, applying industry best practices to meet your organization's needs faster.

GISi Offers:

- *Best Value choice*
- *Best Practices*
- *Best Management discipline*
- *Lowest Risk*

Through these experiences, we fuse valuable lessons learned, proven methodologies, and best practices that will be leveraged to offer the County a clear choice for this project. Experience is one of the greatest advantages we bring to this project: We have experience listening to our clients, identifying business needs, building consensus, and translating requirements into solutions. We have expertise connecting client needs to successful adoption of Esri's ArcGIS for Local Government. We are a leader within the Esri community and leverage our platinum partnership with Esri to share technical direction with our clients. We understand the goals of the County and are convinced that our proven experience, demonstrated expertise, and leadership make us the *best value choice*. Furthermore, our *strong project management processes* minimize execution risk making us the *low risk selection*. GISi is excited about this opportunity and ready to start work.

GISi	Benefits to San Mateo County, CA
Proven experience translating GIS assessments (technical and utilization) into recommendations	**Best value**
Demonstrated expertise with over 400 local government clients	**Best practices**
Strong project management controls	**Reduced risk**

Appendix A: Resume

C. MICHAEL PARMA, GISP
Technical Architect

PROFESSIONAL EXPERIENCE SUMMARY

Technical Architect focused on Esri's ArcGIS for Local Government and ArcGIS Online initiatives. Responsible for strategic implementation of the Local Government Information Model (LGIM). Define and translate client requirements into straw-man technical architecture/solutions. Project manager and technical lead, developing, maintaining, and reporting on project plans and schedules. Implement project controls. Lead communications with the technical team, clients, and stakeholders. Ensure successful completion of the solution design and implementation with technical team support.

Geographic Information Services, Inc. – *Technical Architect*
- Opelika Utilities (Opelika, AL): Technical Architect
  - Migration of water distribution utility into LGIM
  - Web/Mobile Template Implementation
  - Cloud-based ArcGIS for Server and SDE implementation with virtual desktop client connections. Migrated complete physical system and workflows to Cloud.
- Oxford Water Works (Oxford, AL): Technical Architect
  - Migrating full water distribution and sewer utility into LGIM
  - Deployed LGIM operations dashboard and mobile map
  - Implementing desktop data editing templates beside web and mobile operations applications using a central ArcGIS for Server database
- City of Montgomery, AL: Technical Architect
  - Ongoing development support of cloud-hosted Silverlight application with custom Business Analyst Online and Pictometry widgets
  - Managing server and processing imagery caches
- City of Boulder, CO: Technical Architect
  - Provided project management and technical direction
- City of Daytona Beach, FL: Technical Architect
  - System upgrade to ArcGIS for Server 10.1
  - Partial migration into LGIM as a publication environment
  - Ongoing support of SQL server implementation
- Toho Water Authority (Kissimmee, FL): Technical Architect
  - Partial implementation of the LGIM tools for managing water system
  - Developing a Flex application for field crews.
- Gwinnett County, GA: Technical Architect
  - Convert parcel based addressing to point based data

- o Implementing a custom water utilities Flex application for field crews including links to document management. Implemented ArcGIS for Server SDE database and Image Server extension.
  - o Developing an LGIM address management database and multiuser versioned editing workflows in ArcGIS for Server from tax parcel source data.
- Highlands County, FL: Technical Architect
  - o Creating a multiuser, versioned database environment with full LGIM data migration and address data management.
- City of Boca Rotan, FL: Technical Architect
  - o Provided project management and technical direction for partial LGIM data migration and web applications.
- Aqua Water Supply Corporation (Bastrop, TX): Technical Architect
  - o Implemented a wholesale water utilities data migration into LGIM using the desktop editing, mobile map, and ArcGIS for Server
  - o Deployed LGIM operations dashboard and mobile map
  - o Developing a custom GPS data collection application
  - o Installation and upgrade of SQL server
- Waukesha County, WI: Technical Architect
  - o Performed an address data management discovery workshop
  - o Delivered a detailed project plan that recommended adoption and implementation of Esri's ArcGIS for Local Government address data management template and information model to support 911 system
- Jefferson County, WV: Technical Architect
  - o Provided project management and technical direction for data migration and implementation of an LGIM address data management database and workflow to support multiple business processes including 911
- Indian Nation Council of Governments (Tulsa, OK): Technical Architect
  - o Implementing a land use case management system leveraging a GISi Silverlight framework and ArcGIS for Server
- City of Tampa, FL: Technical Architect
  - o Executing a full migration of water distribution, storm water, sewer, and wastewater system data from CAD into LGIM GIS database model including ArcGIS for Server database and desktop editing templates
  - o Made integration strategy recommendations for asset management and inventory software
  - o Extension of LGIM database design and implementation in SQL server
- Florida Bureau of Environmental Health (Tallahassee, FL): Technical Architect
  - o Implementing a modified Tax Parcel Viewer Javascript/HTML5 application for managing customer utility connection information with ArcGIS for Server
- Jackson County, OR: Technical Architect

- o LGIM Conversion Workshop
- o Migration of data into LGIM for web application
- o Created scripts for periodic data exports from external database
- Walworth County, WI: Solution Engineer
  - o Configuration of organizational account, feature services, webmaps, and applications
  - o Onsite needs assessment/discovery workshop
  - o Training and knowledge transfer
  - o Leverage ESRI Maps for Office to create property sales webmap
- City of Boerne, TX: Technical Architect
  - o Migration of planning data (addressing, zoning, land use), water, and sewer utilities into LGIM
  - o Template Implementation and deployment of LGIM parcel viewer and My Government Services apps
  - o Create parcel data import scripts
- Port of Huntsville, AL: Technical Architect & Solution Engineer
  - o ArcGIS Online Jumpstart
  - o Pilot data creation of airport interior space
  - o Created database for hangar rental management
  - o Configured organizational account, feature services, webmaps, and applications
  - o Onsite needs assessment/discovery workshop
  - o Training and knowledge transfer
- City of Greenville, WI: Technical Architect & Solution Engineer
  - o Configured organizational account, feature services, webmaps, and applications
  - o Onsite needs assessment/discovery workshop
  - o Training and knowledge transfer
- City of Alexandria, VA: Technical Architect
  - o Development of custom JavaScript historic preservation application on mobile devices
- SC Army National Guard: Technical Architect
  - o Development of custom JavaScript viewer
- IL Army National Guard: Technical Architect
  - o Deployment of Flex viewer
- MI Army National Guard: Technical Architect
  - o Deployment of Flex viewer
- GA Army National Guard: Technical Architect
  - o Deployment of Flex viewer
- United States Navy: Solution Engineer
  - o Designed and created ArcGIS Data Interoperability ETL tools for data migration into SDSFIE Navy Gold 3.0 Adaptation database schema

EMPLOYMENT HISTORY	
Technical Architect	Geographic Information Services, Inc. Mar 2012 - present
GIS Coordinator	City of New Braunfels, TX Dec 2006 – Mar 2012
GIS Support Consultant	The Response Group Jun 2010 – Jul 2010
Sr. GIS Programmer / Analyst	City of San Antonio, TX Aug 2001 – Dec 2006
Recreation Technician	USDI Bureau of Land Management Aug 2000 – Jul 2001
Graduate Assistant	Northern Arizona University Jan 1998 – July 2000

EDUCATION

Texas State University: Doctoral candidate (2006 – 2008)
Emphasis: GIScience

Northern Arizona University: Master of Science, Forestry (2000)
Thesis: A Comparison of Electronic Technologies for Human Impact Monitoring of Wildland Campsites in Southwestern Environments
Emphasis: GIS, remote sensing, GPS, wildland human impact monitoring

Northern Arizona University: Bachelor of Science, Parks & Rec. Mgmt. (1997, Cum Laude)
Emphasis: Outdoor Leadership; Golden Key International Honor Society, Honor Roll

University of Texas at Austin (1992 – 1994)
Emphasis: Electrical Engineering; Presidential Scholarship; Honor Roll

TECHNICAL EXPERTISE / CERTIFICATIONS

- Certified GIS Professional (GISP)
- ESRI Certified Desktop Professional
- ESRI Certified Enterprise Associate
- Programming
  - Visual Basic.NET, C#, Python, VBA, Avenue, AML, SQL, XML, Javascript, HTML, ASP
- Web Development
  - IIS, JavaScript, XML, ASP.NET, HTML, Flex, Silverlight
- Esri / GIS

- o ArcGIS for Desktop, ArcGIS for Server, ArcIMS, ModelBuilder, ArcPad, ArcLogistics, ArcGIS Extensions (Data Interoperability, Network Analyst, Spatial Analyst, 3D Analyst, GPS Analyst, ArcLogistics, Publisher), ArcCatalog, ArcInfo, ArcView, ArcGIS Online
- Database
  - o ArcSDE, SQL Server, Access, Geodatabase Design and Replication
- Internet/Server
  - o ArcGIS Server Advanced Enterprise, ArcGIS for Server Image Extension, ArcGIS Web API's (Flex, Silverlight, WebADF), Accela Automation, Accela GIS, Windows Server 2003/2008, ArcIMS

PUBLICATIONS AND PRESENTATIONS

Kite, K. and Parma, C. M. 2010. The Role of GIS in an IT Strategy. TAGITM 2010 Annual Education Conference. April 12-14, 2010.

Tracy, T. and Parma, C. M. 2009. Enterprise GIS. 19th Annual SCAUG Conference. April 1-3, 2009.

Stauber, E.; Florence, R.; and Parma, C. M. 2009. Lessons learned with geodatabase replication. 19th Annual SCAUG Conference. April 1-3, 2009.

Parma, C. M. 2008. Building an enterprise GIS using MS SQL Server. 28th Annual Esri International User Conference. August 4-8, 2008.

Parma, C. M. 2007. A spatial model for protection of the Edwards Aquifer. 27th Annual Esri International User Conference. *Proceedings of the 27th Annual Esri International User Conference*. June 18-22, 2007.

Stauber, E.; Chapa, J.; and Parma, C. M. 2006. Advanced ArcSDE Administration Seminar. 16th Annual SCAUG Conference. February 8-10, 2006.

PROFESSIONAL DEVELOPMENT

27 hours of graduate level GIS/RS credit	Geoprocessing with ArcGIS Desktop
Spatial Data Standards for Facilities, Infrastructure and Environment (SDSFIE) v3.0 Introduction	Advanced Analysis with ArcGIS
	Geocortex Essentials Fundamentals
System Architecture Design Strategies	Developing Applications with ArcGIS Server using the Microsoft .NET Framework
Planning for a GIS	
Advanced ICS Command and General Staff (ICS 400)	Introduction to ArcGIS Server
Intermediate ICS for Expanding Incidents (ICS 300)	Understanding ArcSDE Table Relationships
	Introduction to ArcLogistics 9.3
Introduction to the National Infrastructure Protection Plan (NIPP) (ICS 860)	Learning ArcGIS Spatial Analyst
	Introduction to ArcGIS Network Analyst
Introduction to the National Response Plan (NRP) (ICS 800)	Understanding Map Projections and Coordinate Systems
Introduction to the National Incident Management System (NAIM) (ICS 700)	Learning ArcGIS I & II
	Advanced ArcObjects Component Development I & II
ICS for Single Resources and Initial Action Incidents (ICS 200)	Introduction to Visual Basic for Esri Software
	Introduction to ArcInfo using ArcTools
Introduction to the Incident Command System (ICS 100)	Introduction to Visual Basic 6
	Customizing ArcIMS Using HTML and Javascript
Cartographic Design Using ArcGIS 9	Programming ArcView with Avenue

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